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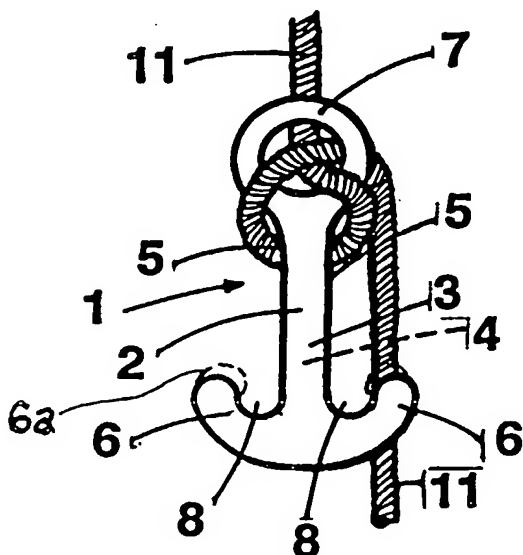
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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ROPE HITCH



(57) Abstract: A unitary hitch (1) comprises an elongated shank (2) having front (3), rear (4) and side (5) faces, a pair of hooks (6) at one end of the shank (2) and a closed eyelet (7) at the other end of the shank (2), wherein the hooks (6) extend from opposite side faces (5) of the shank (2) and the hooks (6) are coplanar with the eyelet (7). A method of using the rope hitch (1) is also described.

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**ROPE HITCH****TECHNICAL FIELD**

The present invention relates to rope tensioners and hitches of the type which can be used to tie down, support or anchor loads.

5

**BACKGROUND ART**

There are many currently available rope tensioning devices and hitches for tensioning ropes, load support and for hauling a range from elaborate lever type devices to more simply constructed tensioners.

Such devices are commonly used in transportation's and yachting fields and the cost of these products varies.

Whilst most trade and transport industry workers are able to competently secure loads using devices and secure knotting techniques the general public's ability to tie an adequate knot for the purpose of securing and tensioning ropes and loads is often somewhat limited.

This can lead to potentially dangerous on road situations as in busy traffic if a load or part of load is lost there is a high risk of an accident occurring.

Lives have been lost when people have taken action to avoid lost loads resulting in deaths.

United States patent No. 5220709 describes a device to assist manual tightening of a rope passed over a load on a vehicle.

The device is first attached too the rope by passing the rope from the upper side of the device through guide to the lower side, then passing the rope up into the lower notch and over the upper side of the device and into the upper notch so that pulling the rope downwardly will secure the device to the rope.

Tensioning may then be achieved by forming a loop in a portion of the free end of the rope, passing the loop around a fixed anchorage site on the vehicle and locating a portion of the loop over the pair of arms.

The free end of rope is then passed behind and over the portion of rope extending between the pair of arms and pulled downwardly, thereby urging the rope that extends between the pair of tensioning arms downwardly and causing tension to be applied to the rope.

The taut rope is then secured by tying the free end thereof to a fixed anchorage site.

The device and in particular the method of tying described is somewhat complicated and as such unlikely to appeal to the inexperienced who would prefer a more simple methodologies.

It is an object of the present invention to provide a rope hitch which is  
5 simple to use, which can be used for tensioning a rope, supporting or hauling a load and which relieves the pressures on tie down points.

Further objects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

#### DISCLOSURE OF INVENTION

10 According to the broadest aspect of the present invention there is provided a rope hitch comprising an elongate shank, a hook at one end of the shank and a closed eyelet at the other end of the shank.

The hook can be orientated to accept a pass of a rope in a first plane and the eyelet is adapted to accept a pass of a rope in a second plane at  
15 ninety degrees to the first plane.

According to the present invention, there is provided, a unitary rope hitch comprising an elongate shank, having front, rear and side faces, a pair of hooks at one end of the shank and a closed eyelet at the other end of the shank, characterised in that the hooks extend from opposite side faces of the  
20 shank and in that the hooks are co-planar with the eyelet.

According to a further aspect of the present invention there is provided a method of tensioning and securing a rope using a rope hitch as aforesaid comprising the steps of making a first pass of a free end of a rope through the eyelet of the hitch, wrapping the rope around the shank of the hitch  
25 proximate to the eyelet making a second pass of the rope through the eyelet so that the second pass of the rope overlies the first pass and tensioning the rope and securing the rope with respect to a remote tie down point.

The method may include the further steps of returning the free end of the rope from the remote tie down point, making a first pass of the rope over  
30 one of the opposed hooks, returning the rope to the remote tie down point, making a second pass of the rope over a second of the opposed hooks, returning the rope to the remote tie down point and securing the rope at the tie down point.

## BRIEF DESCRIPTION OF THE DRAWINGS.

Aspects of the present invention will now be described with reference to the accompanying drawings in which;

5        Figure 1 is a side view of a rope hitch according to one embodiment of the present invention, and

Figures 2 and 2a are side and end views of a rope hitch according to a further aspect of the present invention, and

Figure 3 is a side view of a rope hitch according to a still further aspect of the present invention, and

10       Figure 4 showing the use of the rope hitch of figure 1 used to tie down a load with respect to a remote fixture point, and

Figure 5 is a side view of a vehicle carrying a load indicating the preferred positioning of the rope hitches in relation to a load and tie claim point.

15       With respect to figure 1 of the drawings according to one aspect of the present invention there is provided a rope hitch generally indicated by arrow 1 comprising an elongate shank 2 having front and rear faces 3,4 side faces 5 and a pair of hooks 6 at one end of the shank 2 which extend from the side faces 5.

20       A closed eyelet 7 is provided at the other end of the shank 2.

      The hooks 6 are co-planar with the eyelet.

      The longitudinal axis of channels 8 of the hooks 6 are parallel with the axis of the eyelet 7.

25       Figures 2 and 3 of the drawings illustrate other possible forms of hitch according to the present invention both of which have an elongate shank 2 and a closed eyelet 7.

      In the figure 2 embodiment the hitch has a single hook 6 and a channel 9 created by the hook has a longitudinal axis which is at ninety degrees to the axis of the eyelet 7.

30       In the figure 3 embodiment the end of the shank 2 opposite the eyelet 7 is provided a cord attachment 10.

      Figure 4 of the drawings in configuration with the previous figures

illustrates the manner in which the hook 1 is used to tension and secure a rope.

To tension and secure a rope 11 a first pass of a free end of rope is made through the eyelet 7 of the hitch.

5           The rope is then wrapped around the shank of the hitch proximate to the eyelet 7 and a second pass of the rope through the eyelet is made so that the second pass overlies the first pass.

10           The free end of the rope is then attached to a remote tie down point 12, and returned making a first pass over one of the opposed hooks, returning the rope to the remote tie down point, making a second pass of the rope over a second of the opposed hooks 6 and returning the rope to the remote tie down point where the rope is tied.

15           Similar techniques are used to secure the rope to the eyelets of the figures 2 and 3 embodiments with the overlapping of the rope at the eyelet providing a braking affect.

          In the case of the figure 2 embodiment a single pass is made over the sole hook 6 thereof.

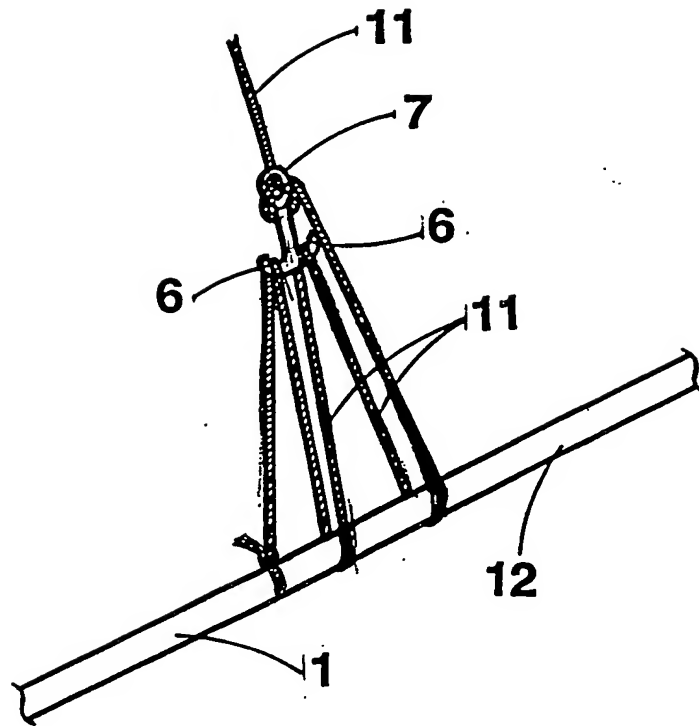
          Figure 5 of the drawings illustrates the preferred positions of the hitches 1 relative to a load and a tie down point 12.

20           To increase the security of location of a rope in any tie down situation the ends 6a of the hooks 6 may be enlarged as indicated in broken outline in figure 1 to narrow the passage into the channels 8.

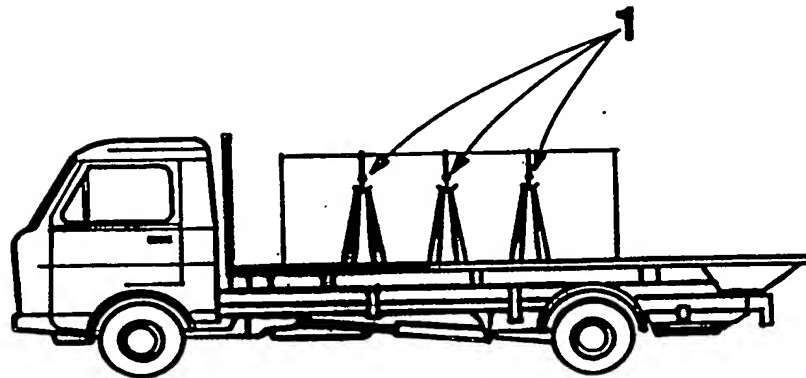
25           Aspects of the present invention have been described by way of example only and it will be appreciated that modifications and additions thereto may be made without departing from the scope thereof, as defined in the appended claims.

## CLAIMS:

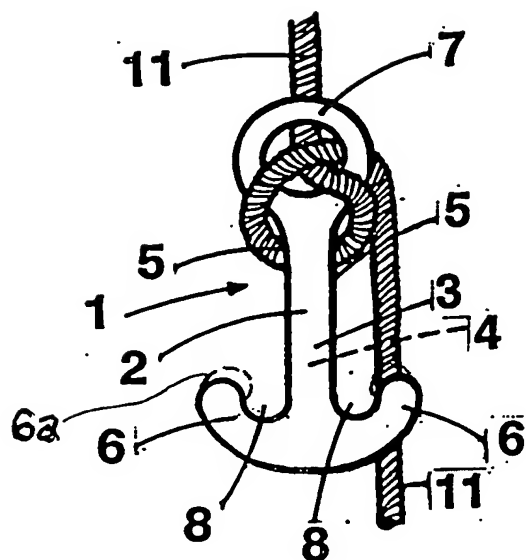
1. A unitary rope hitch comprising an elongate shank, having front, rear and side faces, a pair of hooks at one end of the shank and a closed eyelet at the other end of the shank, characterised in that the hooks extend from  
5 opposite side faces of the shank and in that the hooks are co-planar with the eyelet.
2. A method of tensioning and securing a rope using a rope hitch as claimed in claim 1 comprising the steps of making a first pass of a free end of a rope through the eyelet of the hitch, wrapping the rope around the shank of  
10 the hitch in a proximate position to the eyelet making a second pass of the rope through the eyelet so that the second pass of the rope overlies the first pass and tensioning the rope and securing the rope with respect to a remote tie down point.
3. A method of tensioning and securing a rope as claimed in claim 2  
15 including the steps of returning the free end of the rope from the remote tie down point, making a first pass of the rope over one of the opposed hooks, returning the rope to the remote tie down point, making a second pass of the rope over a second of the opposed hooks, returning the rope to the remote tie down point and securing the rope at the tie down point.



**FIG. 4**

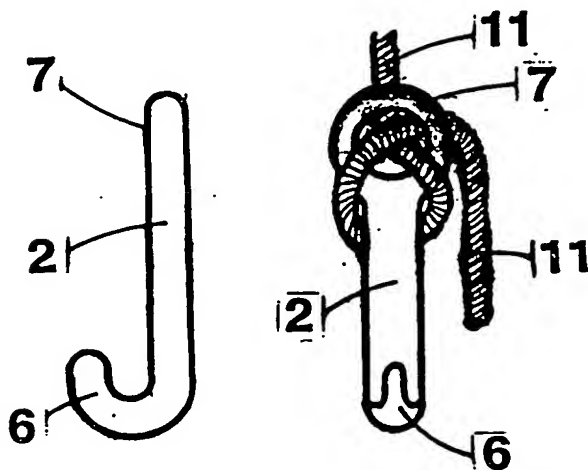


**FIG. 5**

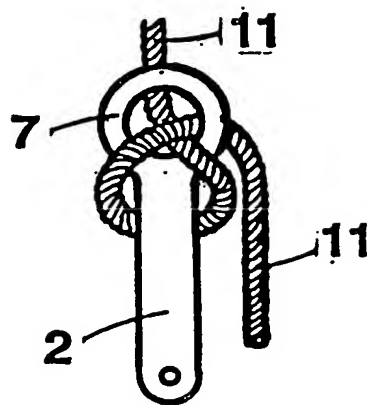


**FIG. 1**

**FIG. 2a**



**FIG. 2**



**FIG. 3**



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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>					
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According to International Patent Classification (IPC) or to both national classification and IPC					
<b>B. FIELDS SEARCHED</b>					
Minimum documentation searched (classification system followed by classification symbols)					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
AU: IPC F16G 11/12, 11/14, B60P 7/08, B63B 21/04					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)					
DWPI: 1. F16G 11/14 2. F16G 11/12 & Hook 3. Hitch & Rope 4. B60P 7/ & Tension & Rope USPTO: 1. Class 24/130 & Hook & Eyelet 2. Class 410/100 & Hook					
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>					
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
E, X	AU 97257/01 (RADFORD) 20 June 2002 Whole document	1-3			
X	US 1421026 (REGAN) 27 June 1922 Whole document	1			
X	FR 2401353 A (SOCIETE INDUSTRIELLE DES PLASTIQUES DE L'ATLANTIQUE) 23 March 1979 Figures 2-4	1			
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <span style="margin-left: 100px;"><input checked="" type="checkbox"/> See patent family annex</span>					
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;">           * Special categories of cited documents:            "A" document defining the general state of the art which is not considered to be of particular relevance            "E" earlier application or patent but published on or after the international filing date            "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)            "O" document referring to an oral disclosure, use, exhibition or other means            "P" document published prior to the international filing date but later than the priority date claimed         </td> <td style="width: 33%; vertical-align: top;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention            "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone            "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art            "&amp;" document member of the same patent family         </td> <td style="width: 33%;"></td> </tr> </table>			* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
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Date of the actual completion of the international search 25 June 2002	Date of mailing of the international search report 03 JUL 2002				
Name and mailing address of the ISA/AU  AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized officer  <b>C.K. WONG</b> Telephone No : (02) 6283 2352				

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU02/00789

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2000192936 A (NAMAI SEISAKUSHO KK) 11 July 2000 Figures 1-5	1

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU02/00789**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
FR	2401353	NONE
		END OF ANNEX